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SIXTH SERIES.

THE APPLICATION OF ELECTRICITY FOR DOMESTIC PURPOSES.

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IT is scarcely necessary nowadays to detail the inestimable advantages which electricity as an illuminant possesses over gas and oil; but unfortunately these advantages, in many cases, although well known, are only appreciated by those who have made use of it in their homes. When we consider the extensive use of gas for lighting and other purposes, electricity as an illuminant may be said to be only in its infancy. It is probable, however, owing to the rapid increase of the use of electric light during the last few years, that, in the more important towns at all events, electricity will soon entirely supersede gas as an illuminant. It is often asserted that gas, even if superseded as an illuminant, will still have opportunities of triumphing over its rival in the work of heating and cooking; but those who hold this opinion have failed to appreciate how efficiently electricity can also be employed for these and similar purposes.

The most important benefit to be derived by the substitution of electric light for gas or oil is that it possesses hygienic advantages of great value. No longer need we inhale air impregnated with the noxious fumes produced by the combustion of coal-gas, nor be disgusted by the offensive smell of the oil which exhales from the imperfect lamp; and the dangers of explosion and suffocation by gas and of fire caused by oil-lamps are too well known to require more than a passing reference here.

We are now quite familiar with the pleasant, mellow light of the electric incandescent lamp; and it gives a brighter, clearer light than gas. Enclosed in its air-tight globe, no good air can be consumed nor bad air given off—a fact which is

itself of sufficiently vital importance to warrant its adoption. An objection has frequently been urged by those who have had no experience of electric lighting that there is a risk of fire in the event of the breakage of a lamp. This fear, however, has no foundation; for if the globe enclosing the filament should be broken, thus allowing the air to get in, the filament of the lamp is instantly consumed and the light extinguished. There are many other advantages to be claimed for the use of electric light; but those enumerated will be sufficient to convince the wavering of its superiority as an illuminant over gas and oil.

When a householder is aware that the cables of a supply company pass within twenty yards of his premises, he may call upon the company to bring the cables to the nearest point these pass; and the company will be bound to do so free of charge on his guaranteeing for a period of two years to pay for such an amount of current as shall, at the price charged by the company, amount to 20 per cent. on the outlay. As the cost of this is not likely to exceed thirty pounds, the obligation will not be considered an obstacle to the adoption of the electric light, as it is hardly likely that any one requiring cables to be laid for his particular use will consume less than, say, seven pounds' worth of current yearly. However, if the cables are already laid in the street where the premises to be lighted are situated, no guarantee is required. In the case of those who live in flats, the whole building is regarded as being the 'consumer's premises,' and the cables are only brought by the supply company to a point just within such building. The cost of providing cables to the top floor, to enable occupants of flats to run branches thereto, should be borne by the owner of the building.

In the event of an intending consumer finding —by reason of his premises being at a distance from a cable of the supply company—that the

* A new and enlarged edition of *Electricity Simplified* has just been issued by Messrs W. & R. Chambers, Ltd.

initial outlay for bringing the current to his house would fall too heavily upon him, he could apply to the company for a requisition-form, for the signature of neighbours who would also guarantee to share this amount of initial outlay. In such cases, the cables may be, and frequently are, laid free of charge.

Having obtained from the supply company a form of application for current, the next step will be to ascertain the number of lights required. One 16-candle-power lamp is usually found sufficient for a room about nine feet long and eight feet wide, the lamp being suspended about seven feet from the floor. It is at once apparent that this rule must be subject to many variations in accordance with the papering, drapery, and general circumstances of each room. It is a very common experience to find such exaggerated ideas have been formed of the brilliancy of electric light that sometimes two or three 8-candle-power lamps have been considered sufficient for lighting a good-sized dining-room. Once, in the writer's experience, great disappointment was expressed by a consumer who in a large residential establishment had substituted one hundred electric lamps of 16 and 8-candle-power for upwards of eight hundred gas jets.

In the public rooms of private houses it is generally advisable to have more lights installed than are actually necessary for efficient lighting, in order to admit of decorative effect when occasion requires. These, of course, should have separate switches to admit of their being used only when desired. In a sitting-room or smoking-room it is a source of convenience—in fact, a luxury—to be able to take a portable standard to any part of the room. This convenience can be had by means of a permanent connection on the wall or the skirting-board, to which a flexible wire is attached and also to the portable standard, the technical name for which is a 'wall-plug.' To admit of this convenience, the expense of wiring the room will have to be increased; but, on the other hand, it will frequently occur, when one good light alone—provided it be obtainable at the exact spot required—will suffice, that a considerable saving in current can be effected by dispensing with the use of all the fixed lights.

The question of wiring the building is an important one. To employ an unscrupulous or ignorant contractor to execute this work is to invite endless trouble and expense in the future, as well as danger; whereas, if this work is well done at first, electricity will be found the safest illuminant ever used. It is but fair to many conscientious contractors to state that the demand for cheap wiring has generally been the prime factor in cases where trouble has arisen in connection with electric lighting. However, the interior wiring of buildings is now so well understood that there is no excuse for defects,

provided always that a fair price is paid for the execution of the work. It is not proposed to enter into the various details here;* let it suffice to state that an exceptionally low estimate should always be regarded with suspicion, as no firm of even moderate standing will undertake to carry out wiring at prices which, in order to admit of a profit, must necessitate the use of inferior material and workmanship.

The question most frequently asked by an intending consumer of electric light is: How does the cost compare with gas? Experts are unfortunately not agreed on this point, and but few consumers of electricity have as yet taken the trouble to keep a correct note of results extending over a sufficient period to afford reliable data. Light for light, it is probably true that, in towns where the Board of Trade unit is over fourpence and the gas three shillings per one thousand cubic feet or under, electricity is a little dearer.

In many cases of supposed overcharge for electric energy, inquiry has shown that the consumer finds the electric light dearer owing to the fact that he has about three times the amount of light he had previously. In a house which has been newly decorated, and where a small 5-candle-power gas-burner had previously given light, a 16-candle-power incandescent lamp is now fixed in a large obscured shade. This is no exaggeration, as it is invariably found that people adopting electric light are determined to have their rooms well lighted, and will not be content with the inferior illumination they had been accustomed to.

The arrangement of the switches plays an important part in the economical working of electric light. If these admit only of groups of lamps being turned off and on, the account for current is sure to be an unpleasant surprise; whereas, if a switch be provided for every light, or nearly every one, the expense of electric light as compared with gas will be found not to bear the great disproportion supposed to exist.

It will always be found convenient and economical to have a switch controlling a single light placed on the wall close to the door of each room; a room may thus be lighted before entering, which prevents the usual performance of stumbling over chairs and barking the shins. Servants, unless specially cautioned, are found very careless with the use of electric light while cleaning rooms in the morning; and this is specially applicable to business premises, where it is invariably found that the lights are left burning until within a short time of the offices being occupied. With a little thought and care there are numerous ways in which the quarterly bill

* The matter of wiring buildings, as also the facts relating to the cost of electricity, will be found fully detailed in *Electricity Simplified*.

for electric lighting may be kept within reasonable limits. The switches can be used with a key; this makes it impossible for any one except the holder of a key to turn on the light.

In the event of a consumer having reason to think he is overcharged owing to the meter not registering correctly, he can personally test the meter in the following manner: A certain number of lights should be turned on for a time—say, twelve 16-candle-power lamps for a period of two hours—when the advance on the meter should be accurately taken. Then another test should be made with half the number of lamps for double the time, and the advance on the meter again noted. A very simple calculation will now give the desired result, and show if the meter is recording accurately.

It is very frequently asked if there is any possibility of electric light becoming cheaper. The answer to this query depends on a great many factors, the chief being whether and when electricity will come to be generally used for the distribution of mechanical power, cooking, and heating. The reduction of the cost of electricity is very much ruled by the consumption. Thus, if the owners of factories, printing-works, &c., would avail themselves of its use for motive-power, the supply company's machinery, which is to a certain extent idle during the day, would then necessarily require to be constantly running for driving the electric motors; therefore, the company could undoubtedly afford to reduce the price to users of electricity for lighting purposes. However interesting comparisons with gas may be made for the purpose of calculation, daily experience affords evidence that the price of gas has no more influence on the price of electric light than that of candles over oil. People continued the use of gas owing to its superiority while the price of oil has been continually declining. For the same reason people will continue to use electric light, even although the price of gas is reduced in the future.

ELECTRIC MOTIVE-POWER.

To some people the information may seem quite a revelation that the same current which gives light when switched on to an electric lamp causes an electric motor to revolve rapidly when it is switched on in an equally simple manner, and thus renders available in their own homes the same power as was hitherto only obtainable when a gas-engine was used. The connection to the motor from the cables—provided only a small motor is required—is exactly the same as that of a portable standard lamp—namely, by means of the flexible wire attached to the motor and the wall-plug, which may be fixed at a nominal cost. Such a connection in the case of a lamp would cause light to be produced, while in that of an electric motor a rotary motion is set up, which renders the power suitable for numerous domestic

purposes, such as organ and harmonium playing, the turning of knife-cleaning machines, sewing machines, butter churns, mangles, boot-polishing machines, ventilating-fans; in fact, there is hardly any limit to the use which may be made of electric motors for household purposes. While the electric supply companies are daily so busy connecting house after house for electric lighting they are unable to direct sufficient attention to the supply of electric power; but as soon as orders for lighting connections begin to slacken, the financial advantages to be obtained will cause them to turn their attention more energetically to the introduction and use of small motors for the supply of power. We are sometimes apt to be over-sanguine on the advent of an enterprise; yet it may safely be predicted that for every unit of electricity now consumed for lighting purposes, ten units will be used for power five years hence.

ELECTRIC HEATING AND COOKING.

The novelty of an invention does not constitute its value so much as the fitness of its application; and in this respect electricity as a means of heating and cooking has undoubtedly many advantages. To many the very idea of electricity heating seems almost a paradox. Electricity has of late been chiefly associated in the public mind with lighting; and, in the opinion of many, one of its principal advantages over gas has been the absence of heat. In the incandescent lamp, however, there is heat—white heat in fact; but owing to the lamp being enclosed in a vacuum the heat does not radiate.

Every additional use to which electricity can be put, increasing as it does the annual consumption of current, increases the revenue of the supply company's undertaking, and consequently admits of the current being supplied at a more moderate price. The quantity of current consumed by a small motor for driving a coffee-mill, knife-cleaner, or even a larger machine used for a dinner-lift, is very small indeed; but the general adoption of small electric motors, heaters, and similar useful domestic apparatus, will greatly help to reduce the cost at which electricity can be produced profitably for lighting purposes.

An efficient method of cooking, if always to be the best, cannot continue to be the same; yet the operations of cooking at the present time have in many details continued unchanged from time immemorial. We yield to custom as we bow to fate; but in the course of changing years we have improved many things, and it now appears that our methods of cooking are about to be revolutionised and improved by the use of an energy which has already been the means of effecting other important changes.

The electric oven roasts and bakes to perfection, and it also possesses many advantages which, prior to the introduction of electric heating, were considered impossible. The greatest of these is that the food is cooked in a pure atmos-

phere, with no smoke, smell, or dust, thus doing away with the necessity of a flue. The heat can be regulated to any degree and distributed throughout every part of the oven as desired, by merely turning on switches. In about twenty minutes the oven can be heated to a temperature of over four hundred degrees Fahrenheit, with all switches on. After the necessary heat is obtained, several of the switches may be turned off and the cooking done with less current, as no heated air need escape up a chimney or through a ventilation-pipe, as is the case with gas. The oven is in some respects similar to that of a baker's, which, when heated early in the morning, has afterwards to work by means of the heat retained. Very little heat is lost in radiation, and the whole of the heat generated is utilised in the interior of the oven. The amount of electricity required to heat it in the first instance may be twice as much as gas or coal, yet the cost in maintaining the heat is only half.

The electric girdle is also very convenient for frying eggs, pancakes, and similar dishes. It is only necessary to turn the current on for about two minutes before commencing to cook, and immediately the cooking is finished the current may be switched off and waste prevented.

In the electric stewpan two or three separate switches are arranged, so that any desired degree

of heat may be obtained, even suitable to the simmering process.

The electric curling-tongs may be heated to about three hundred and fifty degrees Fahrenheit in two minutes. Flat-irons, coffee-pots, and other household apparatus are now manufactured, and may be purchased from the firm employed for fitting up the electric light. There are also many other useful devices—such as electric radiators, and cigar and pipe lighters, &c.

The most economical results can hardly be expected in the early days of such an enterprise; but it has already been successfully demonstrated that many processes of heating and cooking can be carried on as cheaply as with gas. There can be no doubt, however, that on a large scale electric heating or cooking is too expensive to admit of its general adoption.

These inventions and improvements are attractive; but unfortunately their adoption has been delayed owing to the expense. Now, however, that this stumbling-block has been—or soon will be—removed, it is to be hoped that heating and cooking by electricity will be generally adopted with less delay than some may imagine. It is even now thought by many who have turned their attention to this special branch of electrical engineering that the time is not far distant when electric heaters will come into general use.

OUR LADY OF DELIVERANCE.

CHAPTER XVII.—PRELIMINARIES.



I WAS fortunate in my quest at Southampton. Butlers, the yacht agents, had had a fine two-hundred-ton schooner yacht, sail and steam, placed in their hands only the day before. It belonged to young Lord

Derrimore, who had started in her for a cruise in the Mediterranean, but had fallen in with an American millionairess at Nice; so he had thrown up his cruise for more lucrative business on shore, and sent the boat home in charge of her captain, with instructions to Butlers to let her for six months if they could.

She was a very handsome and roomy boat, beautifully fitted, and well found in every respect, and her crew were mostly willing to sign on for a new cruise in place of the one that had fallen through. She was called the *Clutha*, and her captain was a young Scot hailing from Port-Glasgow, by name Andrew Lyle, a fine bright fellow, to whom I took a great liking. So I signed the agreements and left Lyle to get her ready for a long voyage, and then ran up to town.

I had been puzzling my brain ever since I parted from mademoiselle as to the best way of getting her out of the clutches of Madame de

St Ouen, and I had at last hit upon a scheme which seemed to me to be at least possible. But it required legal assistance to carry it through, and I went straight to Mr George Dayrell, of Lincoln's Inn Fields, who was the London agent of Laytons of Liverpool, and with whom I had had some dealings before I left England. He was a tall, strapping, jovial fellow, with a merry laugh and more of the look of a cavalry officer than of a solicitor, and he was just the man to further my plans, I thought.

He welcomed me very heartily, and was immensely interested in all my doings. He begged me to dine with him at his club that night, and after dinner, over coffee and cigars in the most secluded corner of a cosy little smoking-room upstairs, I told him such portion of my story as I deemed necessary, and developed my plans.

'You want to rob a convent of its brightest ornament'—he began.

'But she is only there in trust, so to speak. She has not joined the order.'

'Quite so; but they are, I presume, just as desirous of keeping the young lady in as you are of getting her out, and you want me to help you to get her out. It appeals to me strongly, and

I don't think your plan can be improved on. It may slip up, of course; but on the other hand it has every chance of success, and I don't see any better one. I know some parts of the country about there. If I were you I should drive over from St Servan. If you have to hang about waiting for trains it might be awkward—don't you know? You leave the documents to me. I'll draw them up such a screed as will twist their brains into a knot if they try to make head or tail of it, and I'll cover it with seals till a country notary will bow down and worship it. Oh, I'll fix that part all right. I'd mighty well like to go along and see the fun.'

'It might not be a bad idea,' I said. 'Think it over. I must start from Southampton on Wednesday. You could bully the notary and make him do what is wanted.'

'Yes, I'll go! I wouldn't miss it for fifty pounds. I've nothing important on this week, and it'll be as good as a pantomime.'

'There is one other matter I want you to see to for me, Dayrell.'

'Yes?'

'I want a special license.'

'That's easy. Doctors' Commons—fee twenty-nine pounds eight shillings. Come along to the office in the morning and we'll trot round and get it. This is the kind of job I like. Smack of Gretna Green about it—don't you know? Young lady of age?'

'I'm sure I don't know. Suppose we assume it.'

'Parents living?'

'No—both dead.'

'That's better—from this particular point of view, I mean. They're particular on the French side as to parents' consent, you know.'

We ran down to Southampton on the Tuesday afternoon and found the preparations on the *Clutha* approaching completion.

Dayrell was delighted with the look of her. 'She's a beauty, and no mistake,' he said. 'Say, Lamont, she makes me wish I was going along with you afterwards.'

'And what about the anxious clients cooling their heels in Lincoln's Inn Fields?' I said.

'Oh, hang the clients! It'd give them time to think better of it, and not make fools of themselves.'

We made an early start and a quick run across, and by eight o'clock in the evening were lying at anchor outside the mole of St Malo.

'Let's go ashore at once. I want to hunt up a notary,' said Dayrell. 'I want him to write to-night to the Mother Superior making an appointment for Mademoiselle des Comptes for to-morrow morning. I'll fix the time as soon as I can get hold of a time-table and find out when there's no train back from Combours to this place.'

We went straight to the offices of the South-Western Railway Company, and Dayrell, putting

on his most impressive legal manner, inquired the name of the leading notary in the town.

The clerk mentioned several.

'Do any of them speak English, I wonder?' said Dayrell. 'This is a matter of some importance, and I can't afford to have any misunderstandings.'

'M. Lanoë speaks English well. He doesn't perhaps stand quite so high as M. Lecompte; but M. Lecompte unfortunately neither speaks nor writes English.'

'Thanks. M. Lanoë is evidently the man, but I may as well have both addresses in case one of them should not be available.' And we went straight to M. Lecompte.

He was elderly, extremely polished in his manners, and—he didn't understand a word of English.

Dayrell clothed himself in impressiveness and legalities. He spoke French admirably, and explained what we wanted clearly and distinctly, and the old gentleman took the job in hand with extreme willingness.

'Mademoiselle des Comptes,' said Dayrell, 'who is at present, we are informed, staying with Madame the Duchesse de St Onen, the Mother Superior of the Convent of the Sacred Heart at Combours, is, as monsieur is doubtless aware, of English extraction on her mother's side. These documents'—he flourished his roll of parchments, which looked extremely formidable, with black-letter inscriptions bristling up amid the neatly engrossed text, and massive red seals dangling by green ribbons—'these documents are of extreme importance, and have to be signed by mademoiselle in person in presence of a notary of standing.' M. Lecompte bowed. 'The matter is somewhat urgent, and expense is no obstacle. If, therefore, M. Lecompte, you can make it convenient to come over to Combours with me to-morrow morning, I would ask you to write at once to Madame the Duchesse requesting her to permit you to meet mademoiselle. Now, where can you transact the business? Is there a notary at Combours, I wonder?'

'No!' said M. Lecompte with a decisive shake of the head. 'There is not.'

'H'm! then where—? Mademoiselle cannot well sign in the roadway.'

'There is the inn,' suggested M. Lecompte.

'Of course; that will do quite well. Will you then, M. Lecompte, have the extreme kindness to write at once explaining the matter to madame, and saying that you will await mademoiselle at the inn at—what time shall we say?'

'There is a train about half-past twelve, getting there about half-past one.'

'Then suppose we say two o'clock at the inn. I wonder what time there is a train back.'

'There is no train back till five o'clock,' said M. Lecompte, consulting his time-table.

'Ah! Then it practically means the whole day,

and the steamer leaves at eight. Well, that will do very well. We can get our business done and get away to-morrow night,' he said, looking significantly at me.

'I will write at once,' said M. Lecompte. 'The post has gone; but my letter will reach madame by the early morning train, and she will have it by eight o'clock.'

'That is no doubt as early as madame is likely to be up.'

'But no,' said the old gentleman, with a smile and a gentle shrug; 'madame is extremely devout. She is doubtless at her devotions each morning by five.'

'You know madame personally then, monsieur?'

'Oh yes. I have transacted business for madame on several occasions.'

'So much the better for us,' said Dayrell, as we walked back to the harbour; 'madame will raise no questions and have no doubts, and mademoiselle will be there all right. We will hire a carriage and pair in the morning,' he said. 'Will you drive?'

'Certainly. I can manage that all right. How about finding the way?'

'Start about eleven and you will have heaps of time and can inquire all you want, and give the horses a good rest at the other end. I shall of course come back with you. We must get on board at once and scoot. As soon as they tumble to it, and recover their wits, they will no doubt set the telegraph to work and be on the look-out for us. Where will your boat meet us?'

'Up near the station, I think. I'm told there is a good livery stable in St Servan.'

'We'll try it. You've got the young lady's rig-out and picked your man?'

'Didn't you notice him on board? I had him engaged on purpose.'

'That slim, smooth-faced young fellow with brown hair? I remember him. Well, it'll be touch and go, and there must be no hitches.'

'If mademoiselle comes to the inn she shall never go back to the convent if I have to tie them all to tables and chairs while I walk away with her.'

'I will settle with the old gentleman as we go down,' said Dayrell, 'and I'll make the fee so big that he won't feel hurt whatever happens. He'll have no difficulty in proving that he knew nothing about it. Lyle will be ready to up-steam and off the moment we get on board of course?'

'He'll be ready; and I'll bless the moment mademoiselle sets foot on the *Clutha*.'

I had had the portrait of 'Mdlle. X.' framed during my short stay in town, and it hung now in the saloon; and as I went down I stood before it glorying in the straight shy glance of the steadfast eyes, and vowed by all that I held most sacred—and that was my love for my love—that never, from word or thought or deed,

should she have cause to rue the day she placed her faith in me and her hand in mine.

CHAPTER XVIII.—A SAILOR-BOY MY LOVE WAS SHE.

MY first visit next morning was to the telegraph office, where I sent this message to Prudent Vaurel, Château des Comptes, Cour-des-Comptes: 'Sunday morning—six o'clock.' As arranged between us, he would understand that by that time I should be off the mouth of the river awaiting him and his prisoner.

As a matter of fact, I expected to be there by six o'clock on Saturday afternoon; but it seemed to me better that he should travel by night, as being less exposed to inquisition, and in any case it would not do for him to be awaiting us, whereas we could wait for him without inconvenience.

Then to the St Servan stables, where, by leaving a substantial deposit, I was able to secure a light coupé and a pair of decent horses, and eleven o'clock found me jogging gently Combours-wards, with Jim Barrett, the slim, smooth-faced young sailor, by my side on the box, and nothing inside the carriage but a tightly-strapped plaid.

Jim was dressed in his best Sunday pilot-cloth jacket and a yachting stocking-cap on his brown head. He considered the stocking-cap quite out of place with the pilot-cloth jacket, and had wanted to wear his reefer with the yacht's name on it, and could not understand why I had insisted on his changing it. I now proceeded to enlighten him; and from the way he chuckled and slapped his knee I gathered that he greatly enjoyed the matter we were engaged upon.

We had no difficulty in keeping the Combours road, and we arrived at a little wayside inn about a mile from that centre of the world shortly before one o'clock.

They had not much accommodation; but I had the horses taken out and rubbed down, and gave them the best feed the place afforded. Then, leaving word that we were going for a stroll, and would want to start again in about an hour, Jim picked up that precious plaid and we started for the village; and as we drew near the inn my heart beat high, for there our venture was to be put to the test.

Dayrell had undertaken to keep M. Lecompte busy in any room they were able to procure, so I walked in and asked the white-capped old landlady for a bedroom for the night.

She threw up her hands and doubted if it were possible.

'There are two gentlemen in my only room now; but I do not think they stop the night,' she said. 'Stay. I will ask them;' and she bustled away upstairs, and came down presently. 'That is all right,' she said; 'they do not stop,

so monsieur can have that room when they are done with it.'

'Good! I'll pay you for it at once. But, meanwhile, I want to wash my hands somewhere, and to leave this package. Haven't you another room I could use for a short time?'

'But certainly, monsieur,' said the old lady, beaming all over at the chink of the coins in her hand. 'Will monsieur give himself the trouble to come this way? He can use my own room till the other is at his disposal;' and she led me upstairs to a room alongside the one in which Dayrell and M. Lecompte were awaiting mademoiselle. I could hear their voices through the wall. Barrett carried up the strapped plaid, and madame fussed about and switched things under the bed.

'Monsieur will excuse,' she said with an ancient giggle. 'I did not expect company in my room. But there is water. I will get a clean towel.'

Then she left us alone; and as soon as her back was turned Barrett slipped quietly out of the house and took the road back to the place where we had left the carriage.

He had not been gone five minutes when a rustling down below, which presently came upstairs in the wake of the landlady, told me that mademoiselle and a bodyguard of sisters had arrived, and that the crucial moment was at hand. Their dresses swished against the door behind which I stood, and then I heard the scraping of chairs and the murmur of greetings in the next room.

I had opened the plaid and laid out its contents on the bed: a natty new pair of wide sailor trousers with a leather belt, gauged to the best of my powers, a pilot-cloth jacket, a blue silk necktie, and a stocking-cap—all just like Jim Barrett's; and now I stood waiting with my heart going like a ship's pump.

Presently I heard voices in the passage. I opened the door and Denise was in my arms, between laughing and crying, and all aquiver with suppressed excitement.

I kissed her once. I could not help it, and it only took a second of our precious time.

'Now, dearest,' I whispered hurriedly, 'dress in those sailor things as quickly as you can'—and she flamed red at the words—'and bundle up in the plaid such of your own things as you wish to take. Anything you don't need fling under the bed; leave no visible signs of your transformation. I shall be waiting outside the door. Be as quick as you can.'

I joined Dayrell outside. Outwardly he was as cool as a fish, but his eyes were dancing and his face was alight with smiles.

'We win this hand, my boy,' he said; 'and she's worth winning. I congratulate you, my son.'

'How did you manage to get her away from her keepers?'

'I begged their permission for five minutes' private conversation with mademoiselle as her legal adviser. One of them, a sour-faced old hen with a moustache, was for coming with us, but I headed her off; and at the present moment they're admiring the legal document with its black-lettering and big seals. They look on it as second-cousin to an illuminated missal, I think. I shall go in presently to say that mademoiselle felt faint and the landlady is attending to her. Then I shall come out again to see how she is getting on, and shall do a sprint along the road after you. It's straight along that way, I suppose?'

'Straight as you can go,' I said.

The door opened, and the loveliest red face this world has ever seen peeped timidly out and drew back quickly at sight of Dayrell. He put his finger to his lip and went into the other room. Denise came out with the hastily-bundled plaid in her shaking hands.

'I could not fasten it,' she whispered, and her eyes for once would not look at me.

I hurriedly fastened the straps, and we went down the stairs. Some men drinking in a side-room looked at us as we passed, and we were in the road.

'Another sailor-man,' said an old crone at the corner. 'The place is full of sailor-men to-day.'

We walked rapidly, and my companion showed a desire to keep behind me. It was not till we got out of the village that I really dared to look at her. Then I took her hand and slipped it through my arm and we went on more rapidly still.

'Was all this necessary?' she whispered, with a mingling of remonstrance and laughter in her voice.

'It was, dearest. They may wire to St Malo to be on the lookout for the loveliest'—

She pinched my arm.

'Oh! somebody is coming after us!' she cried suddenly, as quick feet came along the road.

'It's all right. That's friend Dayrell. I couldn't have managed it alone. He's a capital fellow. There's the carriage just ahead. Now we're all right;' and, as Dayrell tumbled in, I whipped up the horses, and we started for St Malo and the new life.

'Famously done!' said Dayrell, as soon as he could speak. 'I'd give any money to see the face of that old lady with the moustache when she finds the bird flown. Here, Lamont, get down and let me drive.'

The change was to our liking, and was rapidly made. Dayrell handled the horses well, and we went along at a spanking pace; never in my life had I enjoyed a drive so much.

I drew the carriage-rug well up round us and held the throbbing little fingers tight in mine below it. The colour deepened in the lovely face every time I ventured to look at it; but her eyes for the most part avoided mine and sought the

travelling landscape outside. And, though I was loath to cause her any discomfort, it was almost impossible for me to keep my eyes off her. Lovely as she always was, there was now, by reason of the strangeness of her circumstances, an added piquancy which doubled all her charms. It was as much as I could do to keep from gathering her in my arms and smothering her with kisses; but the sight of a well-dressed man in a carriage on the public highway smothering a handsome sailor-boy with kisses might have been too much even for the phlegmatic natives of Ille-et-Vilaine. So I had to content my hungry soul with such small crumbs of comfort as could be derived from gently reciprocated squeezings of the little fingers under the rug and from occasional hasty glances at the blushing face by my side. A delightful drive; but it had to come to an end.

The gray cathedral spire and the battlemented walls rose in front, and we drew near to the straggling houses of St Servan. The *octroi* was passed without exciting any undue suspicions of concealed eggs or surreptitious pats of butter, and we were clattering through the stony streets. As we neared the harbour, and turned in the direction of the livery stables, Barrett leaped down to go in search of the boat, and I noticed the quick, eager glance he stole at my companion, and the alacrity with which he went off to find his fellows and give them the points of the story.

We descended quietly at the stables, paid the bill and collected the deposit, praised the horses, and said what a quaint old town Dol was, and then walked along the front till we spied sailor Jim standing on the lookout for us. The yacht's boat was lying there between two smacks, and all the men's eyes were round with enjoyment of the situation as the new hand stepped daintily aboard, displaying the nattiest of little shoes as she did so; and I am quite sure mademoiselle's first impression of that boat's crew was that they were the jolliest and merriest set of men she had ever set eyes on.

As soon as we had taken our seats, Jim shoved off and sat himself down in the well astern, and we went skimming down the inner harbour between the smacks and coasters, and past the rolling bridge, and round the end of the mole, and so at last to the *Clutha*; and glad indeed, and triumphant, was my heart when we lay against her shining side, and mademoiselle tripped up the ladder, and I felt that she was really and truly mine. The screws were churning foam astern before the boat ceased rocking at the davits, and we were off, heading straight for Southampton.

I led Denise downstairs at once to the cabin I had had prepared for her. Her eye fell on the picture as she passed through the saloon, and she stopped before it and stood looking at it.

'How very much has happened since then,' she

said, 'and how very different I feel! Everything is changed.'

'For the better, I hope,' I said; and I raised the soft white hand to my lips and kissed it.

'For the better in some respects,' she said, looking calmly into my eyes. 'Now I only want Gaston, and then I shall be perfectly happy.'

'And Gaston you shall have, and we will all be happy together. Here is your cabin, dearest, and here is the plaid and your belongings;' and I went up on deck to join Dayrell and Lyle.

The yacht was making good time, and St Malo was already dwindling astern to the appearance of a very large church with a very tiny spire. But in front the sky was dark, and seemed to grow darker every minute.

We were leaning over the rail watching the toy town behind when a great cheer broke out forward; and as we turned we saw that it was caused by the reappearance of mademoiselle. She was dressed in her own dress, but had flung the pilot-cloth jacket over her shoulders. The stocking-cap she carried in her hand, and the shining coils of her hair shimmered like dusky bronze in the level sunshine.

She had come up the companion, and was looking for me when the men caught sight of her and gave her a cheer that brought the colour to her face and a sparkle of diamond drops to her eyes. She was taken by surprise at first; but, as soon as she perceived that it was herself they were cheering, she waved the stocking-cap with a charming gesture of *camaraderie* by way of thanks, and the cheers broke out again and again. Then she caught sight of us astern, and came along to meet us.

'Why are they so pleased?' she asked naively.

'English sailors are great admirers of pluck and beauty,' I said, 'and they wanted to tell you how glad they all are that you got through all right. Now, Denise, let me formally introduce to you Mr George Dayrell, of Lincoln's Inn Fields. You have met before.'

'Under different circumstances,' said Dayrell, with his pleasant smile. 'Permit me to add my congratulations to those of our friends forward, mademoiselle. Our journey so far has been most auspicious. But I cannot help my thoughts wandering back at times to your gloomy-faced friend with the moustache. I wonder how she is faring?'

'Poor Sister Cécile!' said Denise demurely. 'I am afraid she will undergo penances of the severest; but it really was not her fault.'

'No; the fault was entirely yours,' I said, 'and you are beyond the reach of penances.'

'Entirely mine?' she said; 'and what about your share, messieurs?'

'Oh, we were only there to assist—and to admire the performance,' laughed Dayrell; and Denise blushed rosy red.

Here Lyle came down from the bridge, as we

were now outside the cordon of reefs and islets, was introduced to his fair passenger, and added his congratulations in good broad Scots and his tribute of admiration in eloquent silence.

After dinner Denise paced the deck with her arm pressing mine till the hours grew old. The stars winked encouragingly and the friendly darkness enfolded us, and there was nothing to disturb us but the pounding of the waves against the sides of the gallant little ship and the humming of the rising wind in the rigging up above; and so, with the hunger of a starving man, I endeavoured to make up for the lost opportunities in the matter of wooing which force of circumstances had defrauded me of. But we did not speak much. We were together, and that was enough.

'Content, Denise?' I whispered once.

She pressed my arm responsively.

'Very happy,' she said; 'but never content till Gaston is free and cleared of all reproach.'

'That comes next—after to-morrow,' I whispered, and I knew that the rosy colour was in her face again, although I could not see it in the darkness.

That long delightful stroll together on the deck of the *Clutha* as she swung through the night towards heaven will never be forgotten by either of us. It atoned in a measure for the missing past, and every turn of the screws brought us nearer to the wonderful future. And when at last we went down, and were parting for the night, my pent-up passion broke bounds and I covered her face with kisses, until she pressed her rosy palms on my lips and broke away and ran into her room.

MYSTERIOUS MUSIC.

By GEORGE GALE THOMAS.



IN all ages men have been ready to idealise music that comes from an unseen source. Who has not loved in childhood's days to hold a shell to the ear and listen wonderingly to the echo of waves breaking on a rocky shore, whose restless sound has been stored up by some magic process? Useless for the scientist to tell us that we are only hearing from a resonant cavity 'the echo of the innumerable sounds which pervade even the stillest air.' We still cling to our tradition, and often in maturer years listen to the mysterious shell-music with much of the old childish feeling.

For mystery always lends a charm to music; and it was perhaps to minister to this feeling that the builders of many an ancient pile placed in the clerestory an Æolian harp whose strings, played upon by the stream of air passing through the window, gave forth wild, wandering melodies, now soft and now on the fitful breeze swelling out in clanging chords that seemed to many a superstitious soul like spirit-music.

Nor were there wanting some to turn this airy music to practical account. Tyndall tells us of a gentleman in Basel who put up in his garden a giant harp, which he called a 'weather harp,' to foretell coming changes by the pitch of its notes. Needless to say, it was quite unreliable, and the Clerk of the Weather was found unwilling to strum his themes upon it.

Perhaps the oldest instance of mysterious music recorded in secular history is that of the Vocal Memnon of Egypt, one of the great Colossi of the Plains. Built by King Amenhotep the Third in the grandest period of Egyptian architecture, these giant sitting figures of seventy feet high

have remained through the ages majestic monuments of the past glory of Egypt. To the eastern figure of the pair is ascribed the powers which have made Memnon famous. From far and near men came to hear the mysterious musical sound which this figure often uttered at sunrise, and which was thought to be the voice of a god.

The origin of the music has long been a matter of controversy. Some have thought it to have been produced by a cunning arrangement of the priests. De Quincey suggests that as soon as the sun's rays had accumulated sufficient heat to rarefy the air within certain cavities in the bust, sonorous currents were produced by causing chambers of cold and heavy air to press upon other collections of warm, rarefied air, which yielded readily to the pressure. Currents being thus established by artificial arrangements of tubes, a certain succession of notes could be concerted and sustained. On the other hand, the historian Rawlinson asserts that the musical powers of Memnon were most likely due to accidental circumstances, as we have no evidence of the sound being heard earlier than the time of Strabo (B.C. 25-10), when Egypt was in the possession of the Romans, and the priests had little influence; although, during the two hundred years of the continuance of the marvel, there were probably many occasions when the priests would have been most anxious for the sound to be heard when the figure was silent. The wife of a prefect went twice to hear it, without success; and the Empress Sabina, wife of the Emperor Hadrian, was on her first visit also disappointed, so that—to quote the ancient historian—'her venerable features were inflamed with anger.' Yet a visitor who was only an ordinary Roman soldier has left an inscription

on the base saying that he heard the sound no less than thirteen times.

The upper part of the statue was shattered by an earthquake in B.C. 27, and it is suggested that the other part of the figure was then affected in some way so that it first gained its musical qualities. It remained so for two centuries, until some improving individual repaired it by adding new blocks, and from that time the music ceased.

Various well-authenticated instances of sudden changes of temperature causing musical sounds to be given off by rocks and stone are quoted from the records of travellers. Humboldt, when travelling in South America on the banks of the Orinoco, wrote: 'The granite rock on which we lay is one of those where travellers have heard from time to time, towards sunrise, subterraneous sounds, resembling those of an organ. The missionaries call these stones *lozas de musica*. "It is witchcraft," said our young Indian pilot. . . . But the existence of a phenomenon that seems to depend on a certain state of the atmosphere cannot be denied. The shelves of rock are full of very narrow and deep crevices. They are heated during the day to about fifty degrees. I often found their temperature during the night at thirty-nine degrees. It may easily be conceived that the difference of temperature between the subterraneous and the external air would attain its maximum about sunrise.'

A similar phenomenon is recorded by some French travellers who, standing one morning in the Great Hall of Karnak at Thebes, were startled by hearing a loud musical sound like the breaking of a chord issue from the blocks at sunrise. Other curious instances have been observed among the sandstone rocks of El Nakous in Arabia Petrea and near Mount Maladetta in the Pyrenees; while near the Red Sea lie some veritable Singing Sands—a chain of sandhills which, by a natural system of grooves inosculating with each other, become musical under changing circumstances in the sun's position.

But perhaps the most interesting experience of musical sands is that recorded by Kinglake in his journey across the desert. He says: 'As I drooped my head under the sun's fire, and closed my eyes against the glare that surrounded me, I slowly fell asleep—for how many minutes or moments I cannot tell; but after a while I was gently awakened by a peal of church bells—my native bells—the innocent bells of Marlen, that never before sent their music beyond the Blagdon Hills! My first idea naturally was that I still remained fast under the power of a dream. I roused myself and drew aside the silk that covered my eyes and plunged my bare face into the light. Then, at least, I was well enough awakened; but still those old Marlen bells rang on, not ringing for joy, but properly, prosily, steadily, merrily ringing for church. After a while the sound died away slowly.'

Kinglake thought he had been the victim of an hallucination; but it is probable that he heard actual musical sounds, either issuing from the rocks beneath the sand, or caused by the friction of the particles of sand over which the travellers were walking, as in the case of a curious mountain which Darwin visited in Guiana. It is called by the natives El Bramador—or the Bellow—because of the sound given forth when the sand covering it is put in motion.

'Some kinds of sand,' as remarked by Professor James Geikie in *Chambers's Encyclopædia*, 'which consist of well-rounded and polished grains of tolerably uniform size, and which are clear or free from dust and small particles, exhibit remarkable sonorous qualities when struck or subjected to friction. The well-known "musical sand" of the island of Eigg (Inner Hebrides) is a good example, and was at one time believed to be almost unique; but, as Professor Bolton of Hartford, Connecticut, and Dr A. Julien of New York have shown, sonorous sands are widely distributed in Europe and America. The sounds emitted are often decidedly musical, and distinct notes can be produced, high or low, according to the nature of the friction and the quantity of sand operated upon. When one walks over a bed of strongly sonorous sand a tingling sensation is perceived even through the boots. After being subjected to friction for some little time, musical sand gradually loses its peculiar qualities, and the same result is produced when the sand is wetted. There is nothing in the appearance of musical sand to distinguish it from mute sand—sonorous and non-sonorous sand of precisely similar aspect lying side by side on the same beach. No satisfactory explanation of the phenomenon has been given.'

Farther south in the swamps of Brazil, Darwin came across other causes of strange music. In the Brazilian swamps are to be found tiny frogs, of the genus *Hyla*, that sing in chorus at night, each perched on the end of a long blade of grass. Their *répertoire* numbers about four notes, and the effect in a lonely swamp, and at night when the tiny forms are unseen, is very astonishing to any one who does not know the secret.

A strange experience of mysterious music in the Bay of Monos, near the Gulf of Paria, in Venezuela, is thus recorded by a traveller: 'Between the howls of the wind I became aware of a strange noise from seaward—a booming, or rather humming, most like that which a locomotive sometimes makes when blowing off steam. It was faint and distant, but deep and strong enough to set one guessing at its cause. . . . As we went to bathe we heard again, in perfect calm, the same mysterious booming sound, and were assured by those who ought to have known that it came from under the water, and was most probably made by none other than the famous musical or drum fish of which I had heard, and hardly believed, much in past years.' The narrator

suggests that this fish might have given rise to the fable of the Sirens, and recalls the fact that the old Spanish Conquistadores had a myth that music was to be heard in this very Gulf of Paria, when at certain seasons the Nymphs and Tritons assembled there, and with ravishing strains sang their watery loves. The story of the music has been usually treated as a sailor's fable, and the Sirens and Tritons supposed to be simply manatees, or sea-cows, coming in to browse on mangrove shoots and thistle-grass; but if the story of the music be true, the myth may have had a double root.

Meanwhile, in support of this, an extract is given from a letter of Monsieur de Thoron, communicated to the Académie des Sciences. He asserts that in the Bay of Pailon, in Esmeraldas, Ecuador, and also up more than one of the rivers, he heard a similar sound, attributed by the natives to a fish which they call the siren or *musico*. At first he says he thought it was produced by a fly—a hornet of extraordinary size; but afterwards, having advanced a little farther, he heard a multitude of different voices, which harmonised together, imitating a church organ to great perfection.

The author of a *History of Trinidad* gives an account of a similar experience off the same coast: 'Immediately under the vessel,' he says, 'I heard a deep and not unpleasant sound, similar to what one might imagine to proceed from a thousand Æolian harps; this ceased, and deep twanging notes succeeded; these gradually swelled into an uninterrupted stream of singular sounds like the booming of a number of Chinese gongs under the water; to these succeeded notes that had a faint resemblance to a wild chorus of a hundred human voices singing out of tune in deep bass.'

In the depths of the Mammoth Cave of Kentucky many of the rocks have a chord of their own, and when the right key is struck beautiful musical effects are produced. The guides understand the secret, and command the rocks to send forth sweet musical responses, and these are continued long by the echoes of the place.

Mr John Procter, formerly State Geologist of Kentucky, gives an account of the effect produced in this remarkable cave by striking the water of the Echo River: 'Instantly the subterranean thunders of this under-world are let loose. From all directions come rolling waves of sound multiplied a thousand-fold, receding and again returning with increasing volume, lingering for many seconds, and finally dying away in sweet far-away melodies. Then, when the last faint sounds have ceased, the guide agitates the water with his paddle, and asks us to listen. The receding waves reaching cavities in the sides of the over-

hanging arches break the stillness with sweet bell-like sounds. Some notes, striking the keynote of the rocks, multiply the musical melody. Some notes are soft and low, others are loud almost with an alarm-bell clangour. This music, such as cannot be heard elsewhere on earth, gradually dies away in receding echoes coming over the waters from far-away hidden chambers. The echo is not such as we hear above ground or in buildings, but a succession of receding waves of sound lasting for about thirty seconds, and adding an indescribable melody to all sounds, whether from shouting or from instrumental or vocal music.'

Such instances, well authenticated by travellers, could be continued indefinitely. Fertile as are Nature's wonders in this respect, they are rivalled by the ingenuity of man.

In Pisa there is a chapel surmounted by a narrow cupola of curious form. It is of such a shape that a note sung in the cupola is prolonged for a considerable time, so that if three or four notes are sung in cadence a most beautiful chord is heard like the rich sounds of an organ. To many an ignorant worshipper it might well seem to be the answering chorus of the choir invisible. It is one of the rare cases of multiple echo, perhaps the result of design, perhaps of accident.

A striking example of the magical effects capable of being produced by any one conversant with the laws of sound was shown by the late Professor Tyndall in one of his lectures. He placed on the floor of the room an ordinary guitar. No one was near, and yet some unseen hand drew sweet music from it, so that all could hear. The guitar was replaced by a harp, with the same result. A wooden tray was then substituted, and even from that issued mysterious harmonies. The marvellous effect was simply due to the sound-conducting quality of wood. In a room beneath, and separated by two floors, was a piano; and connecting the rooms was a tin tube containing a deal rod, the end of which emerged from the floor. The rod was clasped by rubber bands so as to close the tube, and the lower end of the rod then rested on the sound-board of the piano. As the guitar rested upon the upper end of the rod, the sounds were reproduced from the piano; and when the sound-board of the harp was placed on the rod it seemed as though the actual notes of the harp were heard, the notes of the piano being so like those of the harp. As the professor said, 'An uneducated person might well believe that witchcraft was used in the production of this music;' and it is certainly more than probable that if he had done the same thing publicly in an earlier age, he would either have been revered as possessing supernatural powers or have been burned as a sorcerer!

THE MOORISH TREASURE.

CHAPTER III.

THE first thing Wooly did was to mark the place so that he might find it again on his return with a light. So he tied his handkerchief to the bush, and let the latter return to its original position over the mouth of the hole. This accomplished, he set off down the Rock towards the town that lay far below him. His plan was simple. As time was precious, and it would take a good deal of it if he went back for Davie or other aid, he decided that he would manage alone. He would buy a packet of candles at the first shop he came to, and get back as quickly as possible; and, thus provided with light, he felt sure that he could safely get down the hole and find out what had become of Jack. He had no misgivings on the score of his personal safety, for he had several times explored some of the many passages that led into the Rock from St Michael's Cave, the show-cave of Gibraltar, far at the other end; and in these venturesome expeditions he had many times been obliged to wriggle along on his stomach for yards at a time through places just big enough to pass his broad shoulders, and he had always come out of it in safety. This hole did not appear more difficult to negotiate than those others; light was the necessary thing, and that he would soon get.

His expedition took him longer than he had anticipated, however; and when at length he got back to his fluttering signal he found that already it was getting late. As he untied his handkerchief, he glanced at the glorious panorama before him; and the sight of the gleaming Straits, backed by the sombre mass of the African coast, reminded him of the pleasant fact that in a few hours he would be slipping through those shining waters, leaving behind him for many happy days the frowning batteries and hulk-dotted bay of old 'Gib.' A moment only he stood; then, lighting a candle, and placing the rest of the packet in his pocket, he went down on his hands and knees, and was soon working his way into the narrow crack that he found only just big enough to admit him. By the flickering light, Wooly could see that he was in a species of tunnel, the sides of which were formed by the two big rocks before mentioned. The roof, however, was composed of earth and stones, apparently held together and kept in place by the numerous roots of the shrubs that grew above. But soon the character of the hole changed, and he saw that the roof itself became of rock also, and that instead of his being in a crack he was getting into a passage cut in the rock, probably by the action of water in the past. He was not sorry for this; the roots pro-

truding from the earthy roof had greatly hindered his progress, scraping his back unmercifully, and emphasising with many a dig the fact that he had not an inch of room to spare.

He had nearly cleared this first part, however, and was rejoicing in the fact, when he found that one of his feet had caught in the very last root that had inconvenienced him in his wriggling progress. He was flat on his stomach now, having been obliged to assume that undignified position in order to get under the obstacles at all; and, with an impatient exclamation, he gave his leg a violent jerk in order to clear it. He succeeded at once, the root giving way easily. Immediately, however, a rumbling sound filled the air, together with a cloud of dust that nearly choked him, and for a moment he could not imagine what had happened. Then it dawned upon him that he had probably dislodged a few stones by his hasty action, and he worked himself a little backwards, in order to feel with his feet the extent of the fall. Merciful heavens! They encountered, not a little heap of earth and stones, but a solid and unyielding wall!

Like a blighting blast the horror struck Wooly, and his heart stood still. His retreat was cut off! He was trapped like a fox in a tight-stopped earth! He was doomed to die as surely as that glorious sun outside would set behind the mountains across the bay! That unlucky tug at the clinging root had brought down tons of stuff behind him, filling the crack up completely with a tightly-packed mass. Not a chink, not a crevice could his searching feet discover. For a while the horror of his awful fate crushed alike the power of thought or action; but soon his strong young mind began to slowly recover its power, and the instinct of escape—the dogged pluck of race—rose hot within him.

There was but one way now: onwards, until he could find an outlet; or perhaps the passage might widen sufficiently to allow him to turn his great six feet of bone and muscle. Yes, of course, if he could but turn, there was a chance of being able to scrape a way for himself through the mass of fallen earth. It might not be so hopeless after all, he thought. He could not possibly discover, by the touch of his feet alone, how thick his prison-wall might be; it might turn out less formidable than he thought. Only let him find a place wherein to turn, and he would attack the barrier with his hands, and burrow his way to freedom like a mole; ay, if he tore his nails out in the attempt.

Alas! this new-born hope was soon knocked on the head. After a few more yards of serpentine progression he saw by the feeble light of

his candle that a little farther still the passage narrowed down to a mere crack, too small for anything larger than a rat to squeeze through. But this was not all. Another and more terrible obstacle prevented his going farther, even had he wished to examine the end of the tunnel; for, right before him, occupying the entire width of the floor, there gaped a huge hole, black and forbidding as the mouth of a well. Then, indeed, as the luckless fellow saw these things, hope completely fled. Blank despair filled him, and an agony of sweat broke from all his pores. Who shall blame him? Not I, for one, for never was a man in tighter fix than he.

Meanwhile, what of Jack, the disobedient cause of his master's undoing? Not a sound or sign of him had the latter heard or seen; indeed the events of the last few minutes had completely driven the primary cause of his expedition out of his mind. Now, as he lay face to face with his fate, the thought flashed into his harassed brain, 'What of the dog?' He must still be in front, down the hole naturally, since he could not easily have crossed it, lying battered and shapeless a hundred feet below. A hundred feet! Why—oh, blessed thought!—perhaps not twenty. Jack might be safe and sound and still monkey-hunting down other shafts and tunnels. Once more hope, that wondrous friend that carries us over so many bad places, came rushing back to the crushed spirit; and with hope came its comrade, action. Wooly worked his way along till his head hung over the very edge of the chasm. Holding the guttering candle down as far as he could reach and yet keep his balance, he eagerly strove to pierce the black depth that held the secret of his life or death. He could see that the shaft went straight down, also that the sides were, unhappily, quite smooth. Water-worn and polished they appeared to be; not a knob or projection of any kind to help him in his descent could he discover. He might as well expect to get down a factory chimney as down the horrid hole before him. But suddenly as he gazed, and as his eyes grew more accustomed to the darkness, he fancied—nay, he could almost be certain—that he could make out a yet blacker shade, if that were possible, far down below. That might mean bottom, or—horrible thought!—water. True, his candle caused no reflection, as might be expected in the latter case; but he could soon decide the question. He wondered he had not thought of it before. A stone dropped down would tell him one way or the other in a moment. Alas! stones were conspicuous by their absence. The passage just there was as smooth as the sides of the hole. Hunt about as he would, his hand encountered nothing that would answer his purpose. What could he do? Send down a candle? No, under the circumstances candles were far too precious for that. He might have to eat them later on—ugh! the

thought made him sick. His watch, of course! the very thing. What good would his watch be except to remind him of the weary hours that would pass before— He wouldn't think of it.

Gently swinging at the end of its chain, and held well out from the sides of the shaft, hangs the watch, calmly ticking away unconscious of the momentous question it was about to ask, and of the hopes dependent on the answer it would send back from the depths below. Tick-tick, tick-tick. Wooly's straining ears seem already to hear the dreaded splash as he opens his fingers and speeds the fateful messenger. Thud! clatter! as the chain falls on to the watch; an infinitesimal space of time has elapsed during the fall, and Wooly is assured of two things: the bottom is not water, but of sand or earth; and, what is of more importance still, only a short distance below him. A long drop will land him there; and as Jack must have safely done it, why not he?

Luckily the farther edge of the hole had a kind of ledge, or rim rather, that seemed to Wooly to hold out a chance, could he but reach it, of giving him a good grip from which he could drop feet first, and not headlong, as he would have to do if he tried it from his present position. It was a risky undertaking, and did not improve by contemplation; so he hardened his heart, stuck his candle into a little crack beside him, and with much difficulty—and when he was within an ace of losing his balance and tumbling headforemost down the hole—he managed by a supreme effort to grip the other side. Then, drawing his rigid body across as far as he could, he doubled up his legs. His shins scraped the edge, then his insteps, then his toes; and then, with his knees coming a sounding whack against the other side of the well, he found himself hanging at arm's-length, aching all over, and, odd to say, wondering more how to avoid coming down on his watch and smashing it than of the possible damage to his own neck. But hard rock and tender flesh don't agree, and his hands cried out to his spirit, 'Let go;' so, with a last look upwards at his candle, that, flickering above him, seemed like the only friend he had left in the world, he loosed his hold and went down into the darkness beneath him. He hit the bottom hard, very hard indeed. His legs seemed as if they had been driven into his body, and for some little time he felt as he imagined a telescope will feel when suddenly and viciously shut up with a bang. But presently the pain eased off. He felt he had broken no bones, and was thankful accordingly; so he pulled himself together, lit a candle, and looked round him.

He saw his other candle shining some twenty feet above him. 'No wonder the bump was trying,' he muttered. He saw his watch and chain lying half-buried in soft black sand at his feet, and that he had tumbled out of a small tunnel

into a bigger one. But the difference in size was not the only one, pleasant as it was to be able to move freely. Another and more notable difference was that, whereas the little passage was a natural one, this one wherein he now was had evidently been made or enlarged by man! There was no possible doubt about it; its shape and symmetry told him that. But if other proof had been wanting, the pick-marks on its sides could be plainly seen; there they were in their hundreds.

At first Wooly thought that he must have found his way into one of the numerous galleries cut in the North Front of the Rock. But a moment's reflection told him that the idea must be dismissed as impossible. He must have been over a mile if not more from the North Front when he first got into the hole, and he knew he had not come very far from the latter yet, not a hundred yards probably. Besides, the galleries were bigger affairs than this, with embrasures and guns, and such-like warlike things; nothing like this place. No. He must have got into some old and forgotten passage cut in the rock ages and ages ago, though whither it went and whence it came were matters as yet to be discovered.

The first thing to be settled now was which way was the best for him to go? As he stood under the shaft down which he had so successfully tumbled, the passage led away into the darkness on both sides of him. Which to choose? That was the question. In appearance they were similar, about seven feet high, dry, and what was more important than either, fresh and airy, thus showing that they had communication with the outer world somewhere.

As Wooly stooped to pick up his watch, however, the point was decided for him. Plainly to be seen in the sand were the tracks of feet. Not human feet—alas! for the poor 'Sheep'—but the little round depressions that showed that Jack and the monkey had passed that way. They led straight down the right-hand passage; and their discovery settled the matter. Their way should be his, and if it came to nothing he could but retrace his steps and try the other.

With no lack of air, a good bottom to travel on, plenty of head-room and candles, and a man-made passage, the A.D.C.'s prospects brightened considerably; and, as he started afresh with a lighter heart, he actually caught himself speculating as to the probability of his catching the mail after all. He looked at his watch, and to his surprise and delight found it was going as gamely as ever. The trusty though humble old Waterbury had survived where the expensive Benson or Bennet would have succumbed.

For some way all went well. The tunnel remained as good going as ever, and no new obstacles appeared to stop or hinder the A.D.C.'s progress. Suddenly, however, it lost the level character that had hitherto marked it, and Wooly found that

he was going very much downhill. This was rather disquieting. It hardly seemed natural to go downwards if you wanted to get to the open air! Still he kept on eagerly, but was again rather startled at finding that presently the passage forked into two, both branches being exactly alike. He still had the prints in the sand for guidance, however, though where they would eventually land him was very puzzling. The foot-prints were a certain amount of comfort, as without them he would have halted in indecision every fifty yards or so; for—strange thing—he passed passage after passage, first right, then left, twisting and turning until he had not the faintest idea of the original direction. He might be still in the tunnel he started in, or in another; but, as they were all exactly alike, it was impossible to say.

One thing was imperative: his first and foremost consideration was to get over the ground as fast as he could bundle, for he might have to retrace his steps at any moment and explore the other passages till he found an outlet. He began to feel tired and thirsty too; it must be after mess-time, he thought, as he looked at his watch. 'Hallo!' he cried aloud; 'after nine! No wonder I feel a vacuum. No dinner, and, what is worse, no steamer for me to-night. Curse the dog!' he went on savagely. 'I'll wring his neck if ever I catch him again for leading me into this scrape, the disobedient brute.'

Hardly had the words left his lips when, as if in answer to them, he heard Jack's bark coming faintly along the tunnel. 'Here, Jack! Jack, here! Good boy, here, here, I say,' broke from him now in place of curses and savage threats; and to his delight the bark grew louder and louder, till at last the truant made his tardy appearance, and master and dog were fondling each other with the profoundest mutual joy and delight. What about neck-wrangling now—eh? Not much idea of that, I take it. On the contrary, with much contentment, the two journey on together, down, down, always down, until at last, quite unexpectedly, the tunnel comes to an end.

In what? In a great circular room, so high that the light from the candle barely reached its roof—a room cut out of the very womb of the rock, below the level of the sea perhaps—who shall say? An extraordinary room, its walls pierced with many arches, each exactly resembling its neighbour, each the mouth of a black tunnel. Even as Wooly stood in the middle, gazing round him in wonderment, he could not fix on the mouth of the tunnel from which he had just come. He examined each one, until his footprints caught his eye and settled the question. But what of the others? There he stood a prisoner, yet his prison bristled with open doors. He had nothing to guide him now, nothing to choose his path for him; Jack was with him, and the monkey's tracks were gone—they vanished under the wall. Pro-

bably the beast had climbed up into the roof ; there was just enough hold for a monkey. Anyhow, he was gone, and the A.D.C. felt more lost than ever. These passages were terrible. Where had he got to, and for what purpose could this room have been cut long, long ago ?

However, he must not linger ; to stay in this place was, of course, out of the question. He must go on, trying each passage, searching, wandering

up and down until his limbs refused to carry him. It was his only chance. Eagerly he explored passage after passage, each one in turn as far as he dared ; but all to no purpose. They twisted and turned and joined and parted in seeming endless confusion ; until, at last, done up completely, and sick at heart, he threw himself down on the soft sandy floor of the round room, and gave up the job in despair.

THE LIME-JUICE CURE.



HE virtues of lime-juice as a curative agent are not so well known in this country as they should be. By the use of this valuable remedy, scurvy, that formidable disease which formerly wrought terrible havoc among our seafaring population, has been almost entirely abolished. In the last century, scurvy was perhaps a greater scourge than the yellow-fever is to-day ; like yellow-fever, also, its ravages were principally felt among soldiers and sailors on foreign service. Although scurvy is generally considered to be peculiarly a sailor's disease, it is perhaps now more prevalent on shore than at sea, where the use of lime-juice has caused it virtually to disappear. It still occurs frequently in mining settlements, for example, owing to the fact that the miners sometimes live for months at a time on salt or preserved provisions, and very often do not take the trouble to provide themselves with anti-scorbutic preparations. The lime, from which the juice is extracted, is a kind of small lemon ; but the juice of the lime is in a much more concentrated form and more powerful as a remedial agent than that of the lemon.

The lime-tree is extensively cultivated for commercial purposes in the island of Montserrat, and elsewhere in the West Indies, and on a smaller scale in all tropical countries. It is a handsome tree, resembling its relative the orange, with bright-green leaves having strong aromatic properties ; and it bears fruit all the year round. In the West Indies, it is the custom after meals to pass round small finger-basins in which the hands are washed, and a few lime-leaves crushed between the hands at the same time impart a delightful fragrance.

The best quality of juice comes from the island of Montserrat ; although all the lime-juice dubbed 'West India' is of premier quality, just as much of the tobacco labelled Havana comes from other fields than those of Vuelta Abajo. Fresh limes can now be procured in most of our large cities, where they may frequently be seen in the markets and in fruit dealers' windows.

Some years ago, when the writer was troubled with rheumatism, he saw in a German paper an account of the 'lime-juice cure,' which was recom-

mended for that distressing complaint, and determined to give it a trial. He was advised to commence by taking the juice of a dozen fresh limes or lemons daily, gradually increasing the number by two limes per day, until the good effects of the treatment were felt, when the number was to be decreased at the same rate, taking care, however, to continue the remedy for several days after the symptoms had entirely disappeared.

The remedy was tried, and the directions minutely followed, with the most happy results. In a few days the rheumatism had completely disappeared ; nor did it ever make itself felt again. It should be stated, however, that this was the first time the writer had been troubled with this complaint, and that the attack was comparatively mild. Long-standing or severe cases would doubtless require a more prolonged course of treatment.

Doctors tell us that rheumatism is caused by an excess of uric acid in the blood, which has the effect of forming concretions at the joints, these producing the peculiar form of pain experienced by the rheumatic. As a blood-purifier, lime-juice is perhaps unequalled, and its action is both powerful and speedy. It probably acts by dissolving the concretions which are the cause of the pain. In gout, which is a similar complaint, we believe that lime-juice would give equally good results ; though we have never seen it used as a remedy for gout.

The above is not the only instance in which the writer has used lime-juice with satisfactory results. A few years ago, when travelling abroad, he suffered from a very unpleasant complaint. Sores formed on both feet, and continued to increase until the whole of the upper surface of the foot was ulcerated and swollen, and ulcers commenced to form on other parts of the body. The pain was excruciating, and soon he was unable to walk or even stand up without suffering acute torture. The only position in which a little relief was obtained was sitting down and resting both legs on a chair. A doctor who was consulted prescribed various medicines, but seemed to have no clear idea of the cause of the trouble, and the medicines gave no relief. The symptoms, which increased in intensity, indicated, the writer now thought, a

form of blood-poisoning, which may have been caused by eating improper food, as he was then travelling in a part of the country where there was little choice in such matters, and the food was sometimes not above suspicion.

After having endured the pain for about a month, he determined to try the lime-juice cure again. No limes were to be obtained, so he had to be content with lemons. He took the juice of about twenty the first day, and at the end of twenty-four hours the change was most remarkable. The pain disappeared almost entirely, the swelling subsided, and everything indicated a rapid cure. The ulcers still remained, however, and required care. He continued the treatment, increasing the dose the first day or two, then gradually diminished it. After about a week, when he considered himself practically cured, he discontinued the treatment; but the symptoms at once returned, the pain recommenced, and the ulcers increased. On resuming the use of the lemons, the symptoms again abated, and he continued the use of the juice until the ulcers had completely healed.

The juice of twenty or more limes may seem a large quantity; but he found it absolutely necessary to take that amount. The system must become saturated, as it were, with the juice; taken in small doses it produced no effect. It will be well to commence with about half-a-pint of juice a day, increasing it gradually until in eight or ten days the amount reaches a pint; though, if immediate relief is felt, it may not be necessary to increase it to this extent. A third of this amount should be taken three times a day, and the use of the juice should not be discontinued until several days after the symptoms have entirely disappeared. If the doses are decreased too rapidly, a relapse may take place, which should be the signal for an immediate and substantial increase in the quantity.

There are many other diseases, besides those already specified, in which lime-juice might be tried with advantage. It is a remedy which is quite harmless and pleasant to take. The writer always took the pure juice, diluted only with a little water. With sugar it is more palatable, but is probably not equally efficacious.

The juice of fresh limes should be used when possible; failing this, lemons may be used as a substitute; but lemon-juice is not so powerful, and it is also apt to vary greatly in quality, according to the variety of fruit used. As a rule the thick-skinned lemons contain very little juice, and that of poor quality. The preserved lime-juice is also less effectual than that obtained from fresh fruit. If preserved lime-juice is used it should be of equal quality to that employed in the navy. It is the custom now to serve out lime-juice on all vessels passing through the tropics.

The strong antiseptic qualities of the lime are exemplified in the fact that unless the fruit is cut or bruised it does not generally decay like other

fruit, but gradually dries and shrivels up as it loses its moisture, without putrefying; owing to this fact, it may be kept for a very long time—although the juice thereby loses much of its strength and good quality.

[This article, by a resident in South America, is given as a record of personal experience, and not necessarily for imitation, as the quantities prescribed might not suit every constitution or all climates.]

THE COMING OF THE DARK.

FULL-FLUSHED, the sun dropt down

Behind the hill;

O'er hamlet and o'er town

Blue haze rests still;

Trembling, from dappled sky,

The ling'ring light,

With ambered tints anigh,

Sinks from our sight.

With gray wings stately spread,

The twilight goes

Hov'ring from mystic bed

Beneath the rose

That in the gardens old

Blushes bloom-deep,

When day, its sweet tale told,

Fast falls to sleep.

Then, sable-plumed and girt

O'er mead and park,

With low'ring eye alert,

Stalks forth the dark;

Striding majestic on,

Whilst clear afar

His sentry-signal shone—

The evening star.

The deeper heavens then

Flash softened light

O'er forest, flood and fen,

From star-eyes bright;

The floating moon upsails,

And o'er Night's face

Her pale gleam gently trails,

Like silvern lace.

The cooing of the birds

Is stilled at last;

The lowing, mild-eyed herds

Have all gone past;

Peace reigns throughout the land,

And Nature then

Proceeds with lavish hand

O'er field and glen:

Whilst, from her dewy lips,

The cooling mist,

Like evening incense, dips,

Till earth is kissed.

Thus, too, amidst the flowers

The Hand Unseen,

In midnight's gloom-built hours,

At work has been.

ROBERT W. BUTTERS.